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Third Contribution to the Herpetology of San Luis Potosí

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ABSTRACT: An annotated report is made on an herpetological collection belonging to the Louisiana State University, consisting of 525 specimens from various localities in the Mexican State of San Luis Potosí. The specimens represent 65 species and subspecies (or varieties) of the following groups: 20 amphibians, 3 turtles, 20 lizards, and 20 snakes. Thirteen species and subspecies are reported from the State for the first time.

This paper represents a continuation of my studies on the herpetological fauna of the Mexican State of San Luis Potosí. The material on which it is based is a recent collection made by Dr. George H. Lowery, Mr. Robert Newman, Mrs. Marcella Newman, Mr. Walter Dalquest, Mr. A. N. Robinson, and Mr. S. A. Arny, all members of a party from Louisiana State University primarily engaged in ornithological research. For the privilege of examining this collection, as well as the two others previously studied, I am indebted to Dr. George H. Lowery, Director of the Museum of Natural History at Louisiana State University.

My previously published papers^{*} report a total of 144 species and subspecies, distributed as follows: salamanders 5, Salientia 25, turtles 3, lizards 33, snakes 78.

Seven additional species are listed in Smith and Taylor U. S. Nat. Mus. Bull., 199, 1950, p. 226. These include one turtle and six lizards as follows:

Kinosternon hirtipes †

Holbrookia maculata dickersonae

Lepidophyma smithi oculor

Gerrhonotus liocephalus infernalis ‡

Cnemidophorus sackii communis

Anelytropsis papillosus

Leiopeltis caudaequina

^{*} A preliminary account of the herpetology of the State of San Luis Potosí, Mexico, Univ. Kansas Sci. Bull., vol. 33, pt. 1, 1949, pp. 169-215. Second contribution to the herpetology of San Luis Potosí, Univ. of Kansas Sci. Bull., vol. 33, pt. 2, 1950, pp. 441-457, pls. 4-9.

† Possibly a doubtful record.

‡ Possibly based on the form recently designated as *Gerrhonotus liocephalus loweryi*.

One frog, *Rana moorei* § recently described is included.
Ten species added in the present study are:

SALAMANDER

Ambystoma velasci Dugès

SALIENTIA

Rhinophrynus dorsalis Duméril and Bibron

Bufo occidentalis Camerano

Rana montezumae Baird

Rana catesbeiana Shaw

TURTLES

Kinosternon cruentatum cruentatum Duméril and Bibron

LIZARDS

Cnemidophorus sackii scalaris Cope

SNAKES

Ninia diademata plorator Smith

Lampropeltis getulus splendida (Baird and Girard)

Pituophis sayi affinis Hallowell

This brings the total number of forms listed approximately to 162, distributed as follows: salamanders, 6; Salientia, 30; turtles, 5; snakes, 81; lizards, 40.

Only the Mexican states of Oaxaca and Veracruz are known to have a larger snake fauna (99 each); at least six states, Baja California (high with 87 forms), Chiapas, Guerrero, Oaxaca, Sonora, and Veracruz have larger lizard faunas; while the number of amphibians is greater in the following states: Chiapas, Guerrero, Oaxaca, Puebla and Veracruz (high with 71 forms).

Owing to certain revisionary work of other herpetologists and the discovery of errors in the literature, some changes are necessary in the names of certain species listed in my previously published papers on the fauna of San Luis Potosí. A list of these changes follows:

Scaphiopus multiplicatus Cope = *Spea multiplicata* (Cope)

Bufo simus (nec. Schmidt) = *Bufo occidentalis* Camerano

Anolis sericeus (nec. Hallowell) = *Anolis sallaei* Günther

§ *Rana moorei* A. P. Blair from Arroyo Sacahuite at Palictla, 6 miles by highway north of Tamazunchale, S. L. P. Amer. Mus. Novitates no. 1353, 1947, pp. 1-17.

Sceloporus microlepidotus disparilis = *Sceloporus grammicus disparilis* Stejneger

Sceloporus ferrariperezi melanogaster = *Sceloporus torquatus melanogaster* Cope

Cnemidophorus gularis gularis = *Cnemidophorus sackii gularis* Baird and Girard

Thamnophis sauritus proximus = *Thamnophis sirtalis proximus* (Say)

Thamnophis macrostemma megalops = *Thamnophis equestris megalops* (Kennicott)

Elaphe laeta laeta = *Elaphe emoryi emoryi* (Baird and Girard)

A list of the forms treated in this paper is given herewith:

AMPHIBIA

Ambystoma velasci Dugès

Scaphiopus couchii Baird

Scaphiopus sp.?

Spea multiplicata (Cope)

Rhinophrynus dorsalis Duméril and
Bibron

Bufo valliceps Wiegmann

Bufo valliceps var.

Bufo horribilis Wiegmann

Bufo cognatus Say

Bufo punctatus Baird and Girard

Bufo occidentalis Cameron

Syrrophus latodactylus Taylor

Hyla eximia Baird

Hyla arenicolor Cope

Hyla miotympanum Cope

Smilisca baudinii (Duméril and
Bibron)

Hypopachus cuneus cuneus Cope

Rana montezumae Baird

Rana pipiens Schreber

Rana catesbeiana Shaw

TURTLES

Terrapene mexicana mexicana (Gray)

Kinosternon integrum Leconte

Kinosternon cruentatum cruentatum

Duméril and Bibron

LIZARDS

Anolis sallaei Günther

Ctenosaurus acanthura (Shaw)

Crotaphytus collaris baileyi Stejneger

Phrynosoma orbiculare orbiculare
(Linnaeus)

Phrynosoma modestum Girard

Phrynosoma cornutum (Harlan)

Holbrookia maculata approximans
Baird

Holbrookia texana (Troschel)

Sceloporus parvus parvus Smith

Sceloporus variabilis variabilis
Wiegmann

Sceloporus grammicus disparilis
Stejneger

Sceloporus spinosus spinosus

Wiegmann

Sceloporus torquatus melanogaster

Cope

Sceloporus serrifer plioporus Smith

Sceloporus jarrovi minor Cope

Lepidophyia smithi ocellor Smith

Cnemidophorus sackii scalaris Cope

Cnemidophorus sackii gularis Baird
and Girard

Cnemidophorus sackii communis Cope

Barisia imbricata ciliaris (Smith)

Eumeces tetragrammus (Baird)

Eumeces lynce lynce (Wiegmann)

SNAKES

Heterodon nasicus kennerlyi
Kennicott
Ninia diademata plorator Smith
Dryadophis melanolomus veraecrucis
Stuart
Elaphe emoryi emoryi (Baird and
Girard)
Lampropeltis getulus splendida
(Baird and Girard)
Masticophis flagellum lineatulus
Smith
Masticophis flagellum testaceus
(Say)
Drymarchon corais erebennus
(Cope)

Pituophis deppei jani Cope
Pituophis sayi affinis Hallowell
Thalerophis mexicanus mexicanus
(Duméril, Bibron and Duméril)
Tropidodipsas sartorii sartorii Cope
Natrix rhombifera blanchardi Clay
Thamnophis eques eques (Reuss) Smith
Thamnophis sirtalis proximus (Say)
Storeria dekayi texana Trapido
Storeria storerioides (Cope)
Bothrops atrox asper (Garman)
Crotalus lepidus lepidus (Kennicott)
Crotalus atrox Baird and Girard

I wish to acknowledge assistance from the following persons: to Dr. Hobart M. Smith, who examined certain puzzling specimens



FIG. 1. Map of San Luis Potosí, showing collecting localities.

and assisted in their identification; Mr. Leslie Burger for the identification of certain *Cnemidophorus*, and to Dr. L. M. Klauber for the data on the rattlesnakes now in his hands. Dr. George Lowery has kindly prepared the map that is included.

SALAMANDERS

Ambystoma velasci Dugès

Ambystoma velasci Dugès, La Naturaleza, ser. 2, vol. 1, 1888, p. 142 (Substitute name for *Siredon Tigrina* Velasco.) (Type locality, Laguna Santa Isabel, near Guadalupe, Hidalgo, Distrito Federal, México.)

Four larvae and one transformed specimen are in the collection. Nos. 2486-2489 are from 1 km. N Arenal; No. 2490 from 2 km. NE Arriaga. These are the first records of a form of *Ambystoma* from San Luis Potosí.

The larvae closely resembles those of this species from the Valle de México, in the region of the type locality. The transformed young specimen is dark gray with 40 or more small irregular white spots on head and body. The spots on the tail are larger and are on the dorsal part only. The ground color on the tail is darker than that on the body. On the ventral surface of the head and body, the larvae and transformed young are white.

SALIENTIA

Scaphiopus couchii Baird

Scaphiopus couchii Baird, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, 1854, p. 62 (type locality, Matamoras, Tamaulipas [restricted]).

Nos. 2042, 2046-2067. A series of 22 specimens were taken at Hacienda Capulín, on June 21 and June 25; the number of males is 15, of females 7. The males of the series vary in snout-vent length from 54-62 mm. and have a maximum head width of 28 mm. and a maximum leg length (from vent) of 75 mm. The females vary between 54 mm. and 60 mm. in snout-vent length, the maximum head width being 28 mm., the maximum leg length, 70 mm.

The vomerine teeth in the specimens are usually in two fasciculi, between the choanae beginning about the middle and extending at least half their width behind the posterior level of the choanae, separated mesially by a distance greater than that separating them from the choanae. However, there is surprising variation in this character and on occasion the teeth are in two diagonal fasciculi at the end of a ridge originating at the inner anterior edges of the

choanae, the teeth almost or completely behind the hinder level of the choanae.

In all cases the skin of the dorsal part of the head is fused to the bone. The parotoids, if present, are not externally discernible. All specimens are equally tubercular, the tubercles rather small and more or less equally distributed on dorsal and lateral surfaces. Three fingers bear nuptial asperities in the males.

Scaphiopus sp.

No. 2042. Tepeyac. This specimen, in an indifferent state of preservation, differs from the preceding *couchii* in having a snout to vent measurement of 70 mm., the eyes less prominent, the leg, 76 mm. from vent; the femur more completely involved in the integument; and the webbing on the feet somewhat more incised. The skin on the head, however, is similar to that in *couchii*.

The choanae are much narrower transverse slits; the vomerine fasciculi are at the end of a ridge, arising on the inner edge of the slit and converging, separated mesially by a narrow distance. The openings of the palatal glands are two very narrow slits, widely separated, on a level midway between choanae and the front of the palate. The specimen may represent a distinct species but additional specimens must be obtained before the matter may be determined satisfactorily.

Spea multiplicata (Cope)

S[caphiopus] multiplicatus Cope, Proc. Acad. Nat. Sci. Philadelphia, vol. 15, 1863, p. 52 (type locality, Coyocacan, Distrito Federal, Mexico [restricted]).

Nos. 2043, 2045, Tepeyac, June 14, 1950; 2068-2094, Salinas, July 29-Aug. 1, 1950; 2095-2119, 2102, 2202, Hernandez, Aug. 9-11; 2508-2511, 2500-2501, 6 km. S Matahuala; 2512-2518, Presa de Guadalupe; 2519, 19 km. SW Ébano.

When the Mexican species of the genus *Spea* are revised it is possible that subspecific forms may be recognized in the varied populations of northern Mexico. Since the various listed localities are represented by gravid females it would appear that the breeding season may continue at least for two months, from June 14 to Aug. 11.

Rhinophrynus dorsalis Duméril and Bibron

Rhinophrynus dorsalis Duméril and Bibron, *Erpétologie générale*, vol. 8, 1841, pp. 758-760, Atlas, 1854, pl. 91, fig. 2, 2a (type locality, Veracruz, Veracruz, Mexico).

Two very young specimens, Nos. 2496, 2497 are in the collection from 19 km. SW Ébano. This is the first record for San Luis Potosí.

However they have been reported from localities farther north in Tamaulipas.

The specimens are too young for comparison with populations occurring in southern Mexico.

Bufo valliceps Wiegmann

Bufo valliceps Wiegmann, Isis von Oken, vol. 26, 1833, pp. 657-659 (type locality, Veracruz, Mexico [restricted]).

This series, for the most part, shows variation no greater than is typical of the species. The largest specimen, a female, is 95 mm. snout to vent, with a head width of 39 mm. Differing from most other specimens, the venter displays numerous black scattered flecks. The vocal slits in the males are paired in every case. Young females have the feet more slender than males of equal length. Several of the males lack the lateral markings, and the dorsal markings are reduced or obsolescent.

The localities are: Nos. 2140-2160, 7-8 miles east (by road) of Santa Barbarita, 3900 ft. elev.; 2137, 3 mi. S Ajinche; 2161-2168, Tamuzunchale; 2138, 2139, 2181, vicinity of Xilitla; 2136, vicinity of Ébano.

Bufo valliceps var.

Nos. 2174-2178, Hda. Capulín.

This series of specimens has the general superficial appearance of *Bufo valliceps* but there are certain differences that point to a distinct population.

The most significant difference is in the width of the head and the considerably shorter limbs in proportion to the length of the body.

A comparison of the major measurements (in mm.) of three males of *Bufo vallicaps* from three localities with two males from Hda. Capulín, all of nearly equal snout-to-vent length, will reveal considerable difference.

COMPARATIVE MEASUREMENTS OF BUFO VALLICEPS FROM VARIOUS LOCALITIES

	Tamuz- unchale	Xilitla	Sta. Barbarita	Hda. Capulín
Snout to vent....	69	70	70	70
Arm length.....	47	46	46	38
Leg length.....	93	91	89	80
Head width.....	28	31	30	25
Head length.....	22	24	22	20

Most of the males agree generally in color and markings with typical *B. valliceps*. However in no. 2177, the largest female of the

series (80 mm.), the dorsal coloration is largely black and the dorsolateral light line, narrow and irregular. The male, no 2178, is dark, the lighter areas much obscured. The supraorbital crests are less elevated and the occipital crests are shorter and lower than in the other males from Capulín. Other less striking differences may also be found. *Bufo valliceps* has a wide distribution from Texas to middle or lower Central America and one may anticipate that certain variant populations may be named when the species is reviewed. The locality, Hda. Capulín, is, I believe, the westernmost record of the species for San Luis Potosí.

Bufo horribilis Wiegmann

Bufo horribilis Wiegmann, Isis von Oken, vol. 26, 1833, pp. 654-655 (type locality, Veraacruz, Veracruz, Mexico [restricted]).

Nos. 2120-2135, adults; 2169, 2185-2198, juvenile specimens all taken in the region about Tamuzunchale, for the most part, 1 mi. S on the Río Moctezuma. Most of the adults are males, the skin extremely rough with minute black horny spines. The parotoids are deep black or blackish brown. The digit tips and tubercles are covered by black horn. Maximum size of specimens are, ♀ 136 mm., ♂ 125 mm., the average for the adult males being 113 mm.; of the two females 131 mm.

Bufo cognatus Say

Bufo cognatus Say, in Long's account of an Expedition from Pittsburgh to the Rocky Mountains, vol. 2, 1823, p. 190 (type locality, Arkansas River, Prowers County, Colo.).

Nos. 2182-2184. Three specimens of this widespread species were taken at Salinas. The elongate vocal slit of the single male, no. 2182, is dextral.

Bufo punctatus Baird and Girard

Bufo punctatus Baird and Girard, Proc. Acad. Nat. Sci. Philadelphia, vol. 6, 1852, p. 173 (type locality, Río San Pedro, Val Verde Co., Texas).

No. 2044, Tepeyac; nos. 2502-2506, Presa de Guadalupe, are present in the collection. In males the vocal slits are much elongated and are present on both sides of the mouth, and the first two fingers have a considerable area of nuptial asperities, the third only a very small area on its inner edge.

Bufo occidentalis Camerano

Bufo occidentalis Camerano, Atti R. Accad. Sci. Torino, vol. 14, 1878, p. 887 (type locality, Mexico); Firschein, Copeia, 1950, No. 3, Sept., pp. 220-224.

Nos. 2170-2173 adults; nos. 2199-2201 young. This species, formerly recognized under the name *Bufo simus*, is represented by three female specimens, measuring from 24-34 mm. in length, from a mountain just SE of Cañada Grande, 5500 ft. elev. While the characteristic head crests of the young specimens are undeveloped, the parotoid is separated from the eyelid by the narrow width of the incipient supra- or postorbital crest. The species is a new record for the State.

Syrhophus latodactylus Taylor

Syrhophus latodactylus Taylor, Univ. Kan. Sci. Bull., vol. 26, 1939 (Nov. 27, 1940), pp. 397-401, pl. 43 and text fig. 7 (type locality, Huasteca Cañon, 15 km. W Monterrey, Nuevo León, Mexico).

A single specimen of this species (no. 2295) is from a point 8 mi. (by road) E of Santa Barbarita, elev. 3400 feet. It was obtained by Mr. S. A. Arny, Apr. 28. The tympanum is subcircular (3 mm. x 2.9 mm.) and approximately three fourths of the length of the eye (4 mm.). There is no trace of vomerine teeth; the flat inguinal gland is present but scarcely discernible except by dissection; a parotoidlike swelling is present above the tympanum. The species has been previously reported from the State.

Hyla eximia Baird

Hyla eximia Baird, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, 1854, p. 61 (type locality, Valley of México, México).

Nos. 2288-2294. Six of the specimens in the collection are from Hacienda Capulín and one from a point 4 miles east (by road) of Santa Barbarita.

Hyla arenicolor Cope

Hyla arenicolor Cope, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 6, 1866, p. 84.

Nos. 2499, 2507 are from 2 km. SW Arriaga.

Hyla miotympanum Cope

Hyla miotympanum Cope, Proc. Acad. Nat. Sci. Philadelphia, vol. 15, 1863, p. 47 (type locality, Jalapa, Veracruz, Mexico [restricted]).

Nos. 2287, 2299-2301. Three male specimens were taken, at a point seven miles east (by road) from Santa Barbarita. These have the tympani a little larger than those in specimens from central and

southern Veracruz. Some fine dark flecks or indefinite reticulations are visible on the dorsum. No. 2787 from the Río Moctezuma, 1 km. S of Tamuzunchale, emphasizes the sharp angular canthus, the sharp folds under the arm and along the inner side of tarsus; and displays a fairly distinct outer tarsal fold also. The skin of the head and to a lesser extent that of the back is strongly corrugated. The choanae are a little smaller than usual and the vomerine tooth series, usually nearly transverse, are slightly diagonal. The throat and breast are milk white, while the remainder of the venter is yellowish white (in preservative).

Other specimens are nos. 2491-2493, El Salto; 2494, 2495, 2 km. SW Huichihuyan.

Smilisca baudinii (Duméril and Bibron)

Hyla baudinii Duméril and Bibron, *Erpétologie générale*, vol. 8, 1841, pp. 564-565 (type locality, Córdoba, Veracruz [restricted]).

Nos. 2203-2286. This large series of 84 specimens was obtained at the following localities in San Luis Potosí: Capulín; 7 mi. (by road) E of Santa Barbarita; Tamuzunchale; Apetesco (near Xilitla); no. 2498, Valles.

All are males, with paired vocal sacs. The skin of the head is not ossified and is invariably free from the skull. Certain specimens, occurring in northern Mexico, seen elsewhere, have the skin of the head involved in the cranial ossification. I have not been able to ascertain whether this is an occasional condition or whether there is a population having this as a constant character.

Hypopachus cuneus cuneus Cope

Hypopachus cuneus Cope, U. S. Nat. Mus. Bull. 34, 1889, pp. 388-389, fig. 98 (type locality, San Diego, Nueces County, Texas).

Nos. 2318-2351, Hacienda Capulín, collected June 21. A single specimen (no. 2318) is from a point 8 miles (by road) east of Santa Barbarita, taken April 22. Of this series, only four are females.

Rana montezumae Baird

Rana montezumae Baird, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, 1854, p. 61 (type locality, México [city] Distrito Federal, Mexico).

Nos. 2549-2550, Bledos; 2520-2554, 2 km. SW Arriaga; 2521-2538, 2555, 1 km. S Arriaga; 2317, 21 km. E Illescas, 7000 ft. elev.

No. 2554 ♀ is a large melanistic specimen measuring 80 mm.;

* The elimination of the subspecific appellation previously used is due to the fact that the southern presumed subspecies *S. baudinii dotomedei* Barbour is actually *Hyla phacota* Cope.

the dorsal spots can be discerned only with difficulty. The anterior and posterior faces of the thigh are black with fine paper-white dots and flecks. The anterior part of the dorsum has some longitudinal ridges or tubercles, while the posterior part has small tubercles arranged in longitudinal rows. The strong, thick granulation on the sides reaches to the distinct dorsolateral fold.

Other specimens are olive gray and the thighs are light gray with small white spots.

This is the first State record.

Rana pipiens Schreber

Rana pipiens Schreber, Der Naturforscher, Halle, vol. 18, 1872, p. 185, pl. 4 (type locality, Raccoon, Gloucester Co., N. J.).

Nos. 2296-2298 yg., 2303-2316. These series are from the following localities: 1 mi. S Ébano (2303-2306); 7 mi. (by road) E of Santa Barbarita (2307-2308); mountain just SE of Cañada Grande, 5560 ft. elev. (2309-2311); Hda. Capulín (2313-2314); Tamuzunchale (2315-2316); Presa de Guadalupe (2539-2547); Bledos (2548, 2551, 2552); 10 km. E Platanito (2553).

No attempt is made to consider the subspecific relations of this form.

Rana catesbeiana Shaw

Rana catesbeiana Shaw, General Zoology, vol. 3, pt. 1, 1802, p. 106, pl. 33 (type locality, South Carolina [restricted]).

No. 2302. A single specimen taken 1.3 miles south of Ajinche, Apr. 13, by S. A. Army is the first record of this large species in the State. The snout-vent length is 145 millimeters. The ventral surface is mottled dusky olive-black and yellow-cream, the dark color predominating. The species is already known to occur in Tamaulipas and Nuevo León, so its presence in San Luis Potosí is very probably due to natural range rather than to an importation.

TURTLES

Terrapene mexicana mexicana (Gray)

Cistudo (Onychotria) mexicana Gray, Proc. Zool. Soc. London, 1848 (1849) pt. 16, pp. 16-17, pl. 2 (type locality, Tampico, Tamaulipas).

Three specimens of *Terrapene* are in the collection, two very typical 4-toed *mexicanus* female specimens and an old 3-toed male. There are numerous differences between the two sexes that suggest that specific as well as sex differences are involved.

Nos. 2477, Taninule; 2478, kilometer 522, Pan-American Highway. These specimens have a high carapace, the scales still dis-

playing growth sculpturing, and the vertebrals except the last, traversed by a narrow, flattened "keel." The edge of the carapace is thin, sharp-edged, and crenellated where it flares out behind. There is still evident a series of elongate yellowish spots tending to form radiating series. The edges of the scales are slightly darkened above, while the plastrons have broad irregular black lines bordering the inner and posterior sutures. The gulars are largely black and the anterior edges of the pectorals are bordered by black. The top of the head is blackish with yellowish spots.

No. 2479 is from the vicinity of Ébano, 4 miles south of Ajinche. In this old male the dorsal scales are smooth, showing no trace of growth lines and the edges of all are heavily bordered with black. Evidence of a flat keel is present on the third and fourth vertebrals. The posterior part of the plastron is thickened, not scalloped or crenellated, while on the sides the edges of the carapace are smoothly rounded, and there is no trace of a sharp edge present. The scales of the arms are definitely smaller, more numerous, and black with yellow centers (male color character). The scales of the plastron, on the other hand, have only narrow borders of black bordering all sutures front and back. The caudal scales are notched, a character not present in the other two specimens. Scales of the under side of the foot are larger and the claws of the hind foot (and to a lesser extent, those of the hand) are much thicker and heavier but not as long as those in the preceding specimens. The outer toe is not free from the integument and there is no trace of a claw on it. A transverse groove on the snout forms a slightly swollen fleshy "nose" above the nostrils. Adequate series of specimens may show that these presumed sexual differences are of specific value.

Kinosternon cruentatum cruentatum Duméril and Bibron

C[inosternum] cruentatum Duméril and Bibron, in Duméril and Duméril, Catalogue Methodique de la collection des reptiles, livr. 1, 1851, pp. 16-17 (type locality, San Mateo Del Mar, Oaxaca [restricted]).

The discovery in San Luis Potosí of this small three-keeled turtle, known chiefly from southeastern Mexico, in the general region of the Isthmus, extends its known range very considerably northward. The specimen, No. 2480, was taken in an "arroyo 3 miles SSE of Ajinche" in the vicinity of Ébano by Mr. Robert J. Newman, Mar. 15, 1950.

The three keels; the rounded unnotched, unindented, posterior movable part of the plastron; the straight transverse hinges on the movable parts of the plastron; the separation of axillary and inguinal

scutes; the orange or orange-yellow coloring of the plastron, the relatively small size of the species, are characters that refer the specimen to this species.

Kinosternon integrum Le Conte

Kinosternon integrum Le Conte, Proc. Acad. Nat. Sci. Philadelphia, 1854, p. 183 (type locality, Acapulco, Guerrero [restricted]).

A series of five specimens is referred to this species.

Nos. 2481, 2 mi. W. Bledos, 6400 ft.; 2482 Cañada Grande; 2483 San Luis Potosí reservoir; 2485 Hacienda Capulín.

There is considerable difference in the general appearance between nos. 2481, 2482, and the nos. 2483, 2485. The two former have much longer bodies.

LIZARDS

Anolis sallaei Günther

Anolis sallaei Günther, Proc. Zool. Soc. London, 1859, p. 421 (type locality, Jalapa, Veracruz [restricted]).

Under the supposition that *Anolis sallaei* Günther was a synonym of *Anolis sericeus* (Hallowell),* I have previously referred specimens of this species from San Luis Potosí to the latter species. A re-examination of the matter shows that the supraorbital scale rows in *sericeus* are separated by several rows of intercalated scales and the ventral scales are quadrangular. *Sallaei* on the other hand has the supraorbital scales in contact for a part of their length, rarely separated by a single scale row. The occipital scale is separated from the supraorbital scales by rows of three or four scales in *sericeus*, while in *sallaei* it is separated by one or two rows only.

There is a single specimen in the collection (No. 2378) from Río Verde. It is a female, having a slightly longer body than the type. All markings are obsolete.

Ctenosaurus acanthura (Shaw)

Lacerta acanthura Shaw, General Zoology, vol. 3, pt. 1, 1802, p. 216 (type locality, Tampico, Tamaulipas [restricted]).

No. 2415, vicinity of Ébano (1.5 mi. S Ajinche). This specimen, a young female, has the first distinct basal whorl of spines in the tail separated from the second by three scale rows dorsally; the next five whorls by two rows of small scales; next ten whorls by a single row of scales. After these, two rows intervene between the whorls, which now can scarcely be differentiated.

* See Barbour, Bull. Mus. Comp. Zool., vol. 77, 1934, pp. 149-150.

Crotaphytus collaris baileyi Stejneger

Crotaphytus baileyi Stejneger, North Amer. Fauna, No. 3, 1890, p. 103, pl. 12, fig. 1.

One young specimen, No. 2556 from Presa de Guadalupe, is in the collection. There are two complete interorbital scale series, while a third series is not continuous but indicated only by a few small scales. The body has five transverse stripes composed of contiguous, rounded, black spots. The tail is missing and some regeneration has begun.

Phrynosoma orbiculare orbiculare (Linnaeus)

Lacerta orbicularis Linnaeus, Systema Naturae, Ed. 12, vol. 1, 1789, p. 1062 (part.).

One specimen, No. 2577, is from near Arriaga.

Phrynosoma modestum Girard

Phrynosoma modestum Girard, in Stansbury, Exploration and Survey of the Valley of the Great Salt Lake of Utah, 1852, pp. 361-362, 365, pl. 6, figs. 4-8 (type locality, Las Cruces, New Mexico [restricted]).

No. 2578, 7 km. W Presa de Guadalupe.

Phrynosoma cornutum (Harlan)

Agama cornutum Harlan, Journ. Acad. Nat. Sci., Philadelphia, vol. 4, 1825, p. 299, pl. 20 (type locality, Fort Riley, Geary Co., Kansas [restricted]).

Nos. 2416, 2417. These two road specimens with crushed heads are from the vicinity of Illescas (one from 2 mi. east), at an elevation of 7000 ft.

Holbrookia maculata approximans Baird

Holbrookia approximans Baird, Proc. Acad. Nat. Sci., Philadelphia, 1858, p. 253 (type locality, Tamaulipas, Mexico).

Nos. 2383, 2384, 2 km. E Illescas, 7000 ft. elevation; 2579, 1 km. S Arriaga; 2580-2581, 6 km. NE Arriaga, are referred to this species.

Holbrookia texana (Troschel)

Cophosaurus texanus Troschel, Arch. Naturg., Jahr. 16, vol. 1, 1850 (1852), p. 389, pl. 6 (type locality, New Braunfels, Texas).

No. 2381, Presa de Guadalupe; Nos. 2582-2583, Presa de Guadalupe.

Sceloporus parvus parvus Smith

Sceloporus parvus Smith, Trans. Kansas Acad. Sci., vol. 37, 1934, pp. 263-267, figs. 1, 3, 10 (type locality, Hills 5 miles west Sabinas Hidalgo, Nuevo León).

One badly mutilated specimen, No. 2590, is from Presa de Guadalupe.

Sceloporus variabilis variabilis Wiegmann

Sceloporus variabilis Wiegmann, *Herpetologia Mexicana*, 1834, p. 51 (type locality, Veracruz, Veracruz, Mexico [restricted]).

Nos. 2382, 2393, 2405. The first two specimens are from 1.3 miles S of Ajinche; the last, from 20 miles NW of Río Verde.

Sceloporus grammicus disparilis Stejneger

Sceloporus disparilis Stejneger, *Proc. Biol. Soc. Washington*, vol. 29, 1916, pp. 227-230 (type locality, Lomita Ranch, 6 mi. N Hidalgo, Texas).

Two specimens, Nos. 2557 and 2565, are from 3 miles south of San Isidro.

Sceloporus spinosus spinosus Wiegmann

Sceloporus spinosus Wiegmann, *Isis von Oken*, vol. 21, 1828, p. 370 (type locality, Puebla, Puebla [restricted]).

The following specimens are in the collection: nos. 2390, Cerro Peñon Blanco, 7750 ft.; 2400, mountain just southeast of Cañada Grande; 2404, 1.3 miles W Bledos; 2412, Cerro Peñon Blanco; 2385, 12 miles S Tepetate, 6800 ft.; 2386, mountain just south of Cañada Grande; 2387, San Luis Potosí reservoir.

Sceloporus torquatus melanogaster Cope

Sceloporus melanogaster Cope, *Proc. Amer. Philos. Soc.*, vol. 22, 1885, pp. 400-401 (type locality, Túpátaro, Guanajuato [restricted]).

There are specimens from the following localities in the State: nos. 2388, Mezquitic; 2389, Salinas; 2391, 4 miles NW of Palma, 7800 ft.; 2402, San Luis Potosí reservoir; 2573, 3 km. SW San Isidro. The last specimen is a large, brilliantly colored male, measuring 99 mm. snout-to-vent length.

Sceloporus serrifer pliopus Smith

Sceloporus serrifer pliopus Smith, *Zool. Ser. Field Mus. Nat. Hist.*, vol. 26, 1939 (pub. 445), pp. 212-214, pl. 18, fig. 23 (map) (type locality, four miles E Encero, Veracruz).

Nos. 2574-2575, 10 km. SW Ébano; 2576, 2 km. SW Arriaga; 2392, 1.5 miles south of Ajinche (vicinity of Ébano). This specimen is not typical but agrees with a specimen from El Limón, Tamaulipas, discussed by Smith (*loc. cit.*, p. 213). He suggests that the El Limón specimen may represent an undescribed subspecies of *serrifer*.

Sceloporus jarrovi minor Cope

Sceloporus torquatus minor Cope, Proc. Amer. Phil. Soc., vol. 22, 1885, p. 402 (type locality, Valparaiso Mts., Zacatecas, Mexico [restricted]).

Nos. 2394-2399, San Francisco, vicinity of Alvarez, 6700 ft.; 2401, 7 mi. SSE Cañada Grande; 2403, San Luis Potosí reservoir; 2406, Hacienda Capulín; 2407-2411, 2413-2414, Cerro Peñon Blanco, 7750 ft.; 2558-2564, 2566-2569, 3 km. SW San Isidro; 2570, 2572, 1 km. S Arenal.

Lepidophyma smithi occulor Smith

Lepidophyma smithi occulor Smith, Proc. U. S. Nat. Mus., vol. 92, 1942, pp. 378-379 (type locality, Jalpan, Querétaro, Mexico).

Nos. 2379-2380. Two large specimens, the first measuring 104 mm. snout to vent; tail 107 mm. (partly regenerated); and the second, 100 mm. and 140 mm. respectively. Femoral pores 9-10, and 9-11 respectively. They agree with the type save that the top of the head in both specimens is dark, the sides with two or three light temporal spots. The lower jaw is whitish with three or four dark black spots. These are the only specimens known other than the three in the type series.

Cnemidophorus sackii scalaris Cope

Cnemidophorus gularis scalaris Cope, Trans. Amer. Philos. Soc., vol. 17, pt. 1, p. 47 (type locality, Chihuahua (city) [restricted]).

Nos. 2368-2372. 2 km. east of Illescas, 7000 ft.

These specimens have numerous black irregular transverse bands separated by irregular lines of bluish white or series of bluish white dots, about 24 from shoulder to the base of the tail. The chin and throat are pinkish with a bluish wash, or with a dim spot on each side.

Nos. 2368 and 2371 are referred here with some doubt. The first is a very young specimen; the second a female with distinct longitudinal lines.

Cnemidophorus sackii gularis Baird and Girard

Cnemidophorus gularis Baird and Girard, Proc. Acad. Nat. Sci. Philadelphia, 1852, p. 128 (type locality, Brownsville, Texas [restricted]).

The following specimens of this common form are in the collection: Nos. 2352-2353, 1.3 miles south of Ajinche; nos. 2354-2358, mountain just east of Cañada Grande, 6400 ft.; no. 2362, 20 kilometers NW Río Verde; nos. 2591-2596, Presa de Guadalupe; no. 2597, 19 km. SW Ébano.

Cnemidophorus sackii communis Cope

Cnemidophorus communis Cope, Proc. Amer. Philos. Soc., 1877, p. 95 (type locality, Colima, Colima).

Several specimens having the characteristics of *C. sackii communis* are referred to this form. It is characterized by the early disappearance of lines and the retention of fine blue dots on a uniform olive or (in preservation) bluish background. The specimens are from the following localities: No. 2359, 1.3 miles west of Bledos; 2361, 1 mile east of La Paz; 2363, Hda. Capulín; nos. 2364, 2365, Salinas. Specimens nos. 2366, 2367, Hernandez, 7800 ft., are believed by Mr. Leslie Burger to exhibit intergrading characters between *C. sackii scalaris* and *C. sackii communis*.

Nos. 2584-2586, 2 km. SW Arriaga; 2587, 1 km. S Arriaga; 2588, 6 km. NE Arriaga; 2589, Bledos.

Barisia imbricata ciliaris (Smith)

Gerrhonotus levicollis ciliaris Smith, Proc. U. S. Nat. Mus., vol. 92, 1942, p. 365 (type locality, Sierra Guadalupe, Coahuila, Mexico).

Nos. 2373 young, 2377 adult, 2 mi. E of Catorce, at Santa Ana mine, 8900 ft. elev.

A gravid female of this subspecies (105 mm. snout to vent), differs from the type in having five large medial supraoculars with 3-2 outer supraoculars; on each side there are four superciliaries in a continuous series. The postmental is divided unequally, and there are 9-10 supralabials. The color is bronze-olive.

A young specimen taken at the same time and place has two small outer supraoculars and a series of six supraoculars, the fifth medial supraocular being reduced in size and having the appearance of a superciliary. Otherwise it agrees in essential details with the preceding specimen.

Eumeces tetragrammus (Baird)

Plestiodon tetragrammus Baird, Proc. Acad. Nat. Sci. Philadelphia, 1858, p. 256 (type locality, Matamoros, Tamaulipas [restricted]).

Nos. 2374, 2376. Two specimens in good condition were taken from the stomach of a hawk, *Buteo magnirostris*, shot 4 miles SSW of Ajinche, on the road to Oviedo, Mar. 18, 1950, by Dr. George H. Lowery, Jr.

The specimens have two pairs of nuchals instead of the more usual three pairs. There are 28 scale rows around the middle of the body.

Eumeces lynxe lynxe (Wiegmann)

Euprepes lynxe Wiegmann, Herpetologica Mexicana, 1834, pp. 36-37 (type locality, El Chico, Hidalgo).

The collection contains a single young specimen (no. 2375) from a "mountain just south of Cañada Grande, S.L.P., 5700 ft. elevation."

SNAKES

Heterodon nasicus kennerlyi Kennicott

Heterodon kennerlyi Kennicott, Proc. Acad. Nat. Sci. Philadelphia, vol. 12, 1860, pp. 336-337 (type locality, Brownsville, Texas [restricted]).

No. 2420, 2 km. E Illescas, 7000 ft. The following characters obtain in the specimen: four accessory scales on snout; ventrals 143; anal divided; subcaudals 27 (the tail incomplete); scale rows 23-23-21-19; pre-post-subocular series, 10, 8.

Ninia diademata plorator Smith

Ninia diademata plorator Smith, Copeia, 1942, pp. 153-154 (type locality, Durango, Hidalgo).

This is the northernmost record for the genus, and the first record for San Luis Potosí. No. 2602, a female, has a ventral count of 133, and a subcaudal count of 81 + 1. The supralabials are 6-6 and there are but two pairs of chinshields. Total length 255 mm.; tail 83 mm.

Dryadophis melanolomus veraecrucis Stuart

Dryadophis melanolomus veraecrucis Stuart, Misc. Publ. Mus. Zool. Univ. Michigan, no. 49, 1941, pp. 91-93, pl. 4, fig. 6, map 4 (substitute name for *mexicanus*) (type locality, Zacuapán, Veracruz).

No. 2431, vicinity of Xilitla, at Apetsco.

Elaphe emoryi emoryi (Baird and Girard)

Scotophis emoryi Baird and Girard, Catalogue of North American Reptiles, 1853, pp. 157-158 (type locality, Howard Springs, Texas).

Nos. 2418 ♂, 2419 ♀, 1½ miles S Ajinche, vicinity of Ébano. The species, previously known in the State from a single specimen taken at Ébano, is represented by two more from the same general area.

The specimens, respectively, present the following scale data: Scale row formulae 25-27-25-19, 25-27-23-19; ventrals 233, 235; subcaudals 68 + 1, 65 + 1; anals 2, 2; dorsal body blotches 34, 37; tail blotches, 14, 13.

Lampropeltis getulus splendida (Baird and Girard)

Ophibolus splendidus Baird and Girard, Catalogue North American Reptiles, pt. 1, p. 83, (type locality, Santa Rita Mts. [restricted]).

No. 2421, vicinity of Illescas, 7000 ft. The finding of a specimen of this subspecies far south of the known range is indeed a surprise since the characteristics maintained are those of the typical specimens.

Laterally the black scales bear yellow dots, the size of the dots varying so as to produce an indefinite pattern of very narrow dark and light diagonal lines. The scales of the dorsum are black but at intervals one to four small yellow dots placed transversely break the black area into 56 incompletely delineated spots or bands. The venter is coal black, with each ventral scale bearing a large white dot at one end or the other; or not impossibly, on both ends. The anal scale is white. The head is coal black save for some indefinite yellow marks on the scales of the snout and labials, the lower labials and chinshields each bearing a yellow spot. The following characters obtain: length 437 mm.; tail 65 mm.; scale rows 23-23-23-19 (33 rows about back of head); ventrals 203; subcaudals 53 + 1; anal single; supralabials 8-8, infralabials 9-9.

The nearest point where specimens of this form have been taken previously, is the lower Rio Grande valley in Texas, a distance of nearly three hundred miles. In Mexico, it has been reported previously in northern Chihuahua and (questionably) northeastern Sonora. This is a most interesting addition to the known range of the species.

The specimen was obtained by Mr. Robert Newman.

Masticophis flagellum lineatulus Smith

Masticophis flagellum lineatulus Smith, Journ. Washington Acad. Sci., vol. 31, 1941, pp. 394-397 (type locality, 11 miles south of San Buenaventura, Chihuahua).

Three specimens of this very distinctive subspecies are present in the collection: no. 2422 from the vicinity of Illescas, 7000 ft.; no. 2423, 2 kilometers east of Illescas, 7000 ft.; no. 2424, Hernandez. The scale counts for the three specimens are:

Number	Ventrals	Anal	Subcaudals
2422	193	2	48 +
2423	194	2	69 +
2424	192	2	103

The brilliant pink or salmon-pink coloration of much of the ventral surface is a conspicuous feature of this form. The throat and chin are heavily mottled in brown, the spots tending to coalesce. Paired

spots on the anterior ventrals are brown with often a pinkish center, which in some cases increases until only a tiny black spot of the dark color is left.

Masticophis flagellum testaceus (Say)

Coluber testaceus Say, in Long's Expedition to the Rocky Mountain, vol. 2, 1823, p. 48 (type locality, Pueblo, Colorado [restricted]).

Three specimens are in the collection: no. 2428 ♂, Laguna Chica, vicinity of Ébano; no. 2598, 12 km. SE Presa de Guadalupe (a large, badly mutilated road specimen); no. 2599, 28 mi. S Matahuala.

The scale counts are: 2428, ventrals 192, subcaudals 109 + 1; 2598, ventrals 202, subcaudals 103 + 1; 2599, ventrals 200, subcaudals 104 + 1.

No. 2599 is represented by a skin including the head and tail intact. It differs markedly from the two other specimens in having six light, broad, irregular bands (or blotches) separated by dark bands on the anterior half of the body. At a point near the middle, the bands cease. There are some small dark dots or flecks scattered on the light bands.

This unusual variety is noted by Ortenburger in his monograph, Whipsnakes and Racers (Univ. Michigan Press, 1928, p. 94), but localities are not given.

Drymarchon corais erebennus (Cope)

Spilotes erebennus Cope, Proc. Acad. Nat. Sci. Philadelphia, vol. 12, 1860, p. 342 (type locality, Eagle Pass, Texas).

No. 2600, 19 km. SW Ébano. The specimen has 181½ ventrals and 61 + 1 subcaudals.

Pituophis deppei jani Cope

Pituophis jani Cope, Acad. Nat. Sci. Philadelphia, vol. 12, 1860 (1861), p. 369 (type locality, Buena Vista, Coahuila).

No. 2425. This specimen, from 15 kilometers NW of San Luis Potosí, has the anterior blotches entirely black, while the more posterior blotches still show some brown about the bases of the individual scales, the greater portion of each scale being black. There are 29 black spots on the body and 9 on the tail. The light intervening spots are five or six scales long. The scales of the venter number 227, the anal is single, and the subcaudals 58. In the number of the spots, the species is a typical *jani*; in the tendency for

the light interspaces to be reduced to four and three scale-lengths, it approaches *deppei*. In the tendency for the brown posterior spots to become black the approach is toward *deppei*. Scale counts are not definitive since they are in the overlapping range. The tendency for the dorsal spots to fuse on the sides, points to *jani*. The locality, however, is in an area where intergradation is to be expected; but since the greater number of characters are those of *jani*, I have referred it to this form.

No. 2603 is a young specimen from 15 mi. NE of San Luis Potosí (city). Ventrals 218, subcaudals 60 + 1. There are 28 blotches. The head is very light with markings very faintly indicated.

Pituophis sayi affinis Hallowell

Pituophis affinis Hallowell, Proc. Acad. Nat. Sci. Philadelphia, 1852, p. 181 (type locality, Zúñi, New Mexico [restricted]).

Two specimens of a *Pituophis*, one from 2 kilometers east of Illescas, 7000 ft. (no. 2426), and the other from the vicinity of Illescas (no. 2427) are referred to this subspecies. It is from a locality considerably south of the previously known range. The specimens, while not agreeing in all detail with the more typical *affinis*, do agree in most characters and patterns.

The specimens have the following scale counts:

Number	Body spots	Tail spots	Ventrals	Subcaudals	Scale formula
2426	38	13	220	60 + 1	31-29-31-21
2427	45	15	215	66 + 1	31-29-31-23

The color of the head is gray to tan-olive with a series of small irregularly placed black spots on the posterior head scales (frontal and occipital regions), and the labials are bordered by narrow vertical lines of black. The dorsal spots are brown anteriorly, becoming somewhat reddish or reddish brown. The skin is brownish red between the scales. On the tail the skin between the scales forming the spots is red while the scales themselves are brownish red. The chin and throat are immaculate white.

Thalerophis mexicanus mexicanus (Duméril, Bibron and Duméril)

Leptophis mexicanus Duméril, Bibron and Duméril, Erpétologie Générale, vol. 7, pt. 1, 1854, pp. 536-537 (type locality, Potrero Viejo [restricted]).

No. 2437. A single specimen of this well-known species was taken 15 kilometers east of Ébano by Mr. W. Dalquest. The ventrals number 170; anals 2; subcaudals 161 + 1.

Tropidodipsas sartorii sartorii Cope

Tropidodipsas sartorii Cope, Proc. Acad. Nat. Sci. Philadelphia, vol. 15, 1863, p. 100 (type locality, Mirador, Veracruz).

No. 2429. One road specimen was obtained three kilometers north of Valles. The color of the specimen was "dark purple and pale orange bands."

Natrix rhombifera blanchardi Clay

Natrix rhombifera blanchardi Clay, Ann. Carnegie Mus., vol. 27, 1938, pp. 251-253, pl. 25 (type locality, Tampico, Veracruz [restricted]).

No. 2432. 6 km. N Tamuín. The specimen has the ventral surface much clouded on the ends of the ventrals, while on the tail there are discrete black triangular subcaudal spots. The ventrals number 143, anals 2, subcaudals 86. The head is dark, almost black, and the dorsal pattern is obscure unless the specimen is submerged.

Thamnophis eques eques (Reuss) Smith

Coluber eques Reuss, Mus. Senckenberg. Abh., vol. 1, 1834, p. 152, pl. 8, fig. 2 (type locality, Mexico).

A very young specimen, no. 2434, from Santa Teresa, and an adult, no. 2601 from Bledos are in the collection. The latter specimen has the following scale count: ventrals 162, subcaudals 69.

Thamnophis sirtalis proximus (Say)

Coluber proximus Say, in Long's Expedition to the Rocky Mountains, vol. 1, 1823, p. 187 (type locality, three miles above the mouth of Boyer's River, stonequarry on west side of Missouri River, Washington Co., Nebraska).

Nos. 2435, 2436 from 6 km. N Tamuín.

Storeria dekayi texana Trapido

Storeria dekayi texana Trapido, Amer. Midl. Nat., vol. 31, 1944, pp. 63-70, figs. 45-50 (type locality, Edge Falls, 4 miles south of Kendalia, Kendall Co., Texas).

No. 2430. The single road specimen in the collection from Xilitla, does not permit absolute identification as to subspecies, since the head scales are largely destroyed. It is in the known range of this subspecies.

Storeria storerioides (Cope)

Tropidoclonium storerioides Cope, Proc. Acad. Nat. Sci. Philadelphia, vol. 17, 1865, pp. 190-191 (type locality, Tres Cumbres, Morelos [restricted]).

No. 2433. A single specimen of this widely distributed form is in the collection from a mountain just south of Cañada Grande, 5700 ft. elev.

Bothrops atrox asper (Garman)

Bothrops atrox asper Garman, Bull. Mus. Comp. Zool., vol. 8, 1883, p. 124 (type locality, Obispo, Panamá).

No. 2444 is a headless specimen from the vicinity of Xilitla.

Crotalus lepidus lepidus (Kennicott)

Caudisonia lepidus Kennicott, Proc. Acad. Nat. Sci., Philadelphia, vol. 13, 1861, p. 206 (type locality, Presidio del Norte, Texas [restricted]).

A single specimen of this species was taken at Cerro Peñon Blanco, 9600 feet.

Crotalus atrox Baird and Girard

Crotalus atrox Baird and Girard, Catalogue of North American Reptiles in the Museum of the Smithsonian Institution. Pt. 1. Serpents. 1853, p. 5 (type locality, Indianola, Texas [restricted]).

The following specimens of this species were taken: Nos. 2439, Hacienda Capulín; 2440, vicinity of Illescas, 7000 ft.; 2441-2443, 2 miles E of Illescas, 7000 ft.